



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 28 1983

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MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: 830AZ-06. Proposed Section 18 exemption for the use of acephate on grapes in Arizona.

FROM: Edward Zager, Chemist
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Hazard Evaluation Division (TS-769)

THRU: Charles L. Trichilo, Chief
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TO: Donald Stubbs, Product Manager #41
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and
Toxicology Branch
Hazard Evaluation Division (TS-769)

Edward Zager
CT

The Arizona Commission of Agriculture and Horticulture requests a Section 18 exemption for the use of Orthene 75S (75% acephate) on grapes to control grape leafhopper.

Tolerances for residues of acephate (O,S-dimethyl acetylphosphoramidothioate) and its cholinesterase-inhibiting metabolite (O,S-dimethyl phosphoramidothioate) have been established at levels of 0.1-15 ppm on various commodities including 0.1 ppm in eggs, milk and the meat, fat and meat byproducts of cattle, goats, hogs, horses, poultry and sheep.

PP#3E2867 proposing a 3 ppm tolerance (of which no more than 0.5 ppm is methamidophos) in or on imported grapes is currently under review.

The proposed use calls for up to 3 ground applications at the rate of 0.75-1lb act/A in 25-100 gallons of water/A with a 21 day PHI. It is estimated that 3,489 acres of grapes will be treated under this exemption.

Residue data reflecting the proposed use were submitted and reviewed in conjunction with PP#5G1604 (See J. Worthington's memo of 5/18/76). Some additional residue data submitted with this request reflect PHI's considerably longer (>143 days) than the proposed 21-day PHI.

The combined residues of acephate and methamidophos remaining 21 days after 3 applications of 1 lb act/A (The maximum proposed rate) ranged from 0.47-1.8 ppm in or on grapes. Residues of methamidophos alone ranged from 0.04-0.21 ppm.

Residue data for raisins were submitted from three of the studies described above. A three-fold concentration of residues was observed upon processing of treated grapes into raisins. Total residues of acephate and methamidophos in raisin waste ranged from 3.3-4.6 ppm at 14 days following 3 applications of 1lb act/A. Residues of methamidophos per se ranged from 0.27-0.29 ppm. These are expected to dissipate to less than 3 ppm and 0.3 ppm respectively at 21 days.

Concentration factors reported for the processing of grapes to dried grape pomace ranged from <1-3.6X.

No significant concentration of residues was observed upon processing of grapes into grape juice.

Based on the above data we estimate that residues of acephate and its metabolite methamidophos will not exceed:

3 ppm (of which no more than 0.3 ppm is methamidophos)	in or on	grapes grape juice raisin waste
9 ppm (of which no more than 1 ppm is methamidophos)	in or on	raisins dried grape pomace

Meat, Milk, Poultry and Eggs

Cattle, swine and poultry feeding studies reflecting diets of 3,10 and 30 ppm acephate were reviewed in connection with PP#3F1375 (see the memo of 10/31/73 by W.S. Cox and 8/15/74 by Dr. R. Schmitt). The cattle and swine studies also include the

addition of methamidophos at 20% the level of acephate in each respective diet. Tolerance have been established on various feed items (principally cottonseed meal at 8 ppm and soybean meal and cottonseed mills at 4 ppm). A 0.1 ppm tolerance has been established for residues of acephate in eggs, milk and the meat, fat and meat byproducts of cattle, goats, hogs, horses, poultry and sheep to cover secondary residues resulting in these commodities from the ingestion of treated feed items.

The feeding studies cited above demonstrate that residues in the bovine porcine and poultry diets could approach 5 ppm before residues in milk, eggs or tissues would be expected to exceed the established 0.1 ppm tolerance. The currently registered uses could contribute about 1.2 ppm to the bovine and porcine diets and about 0.8 ppm to the poultry diet.

The proposed use involves the following feed items: raisin waste with 3 ppm, and dried grape pomace with 9 ppm. The feeding of grape pomace will make the largest contribution to the burden in the livestock diet: 1.8 ppm for cattle and hogs and 0.45 ppm for poultry (9 ppm times the 20% bovine and porcine diet factor = 1.8 ppm and 9 ppm times the 5% poultry diet factor = 0.45 ppm).

Thus the maximum calculated dietary intake level from all sources would be about 3 ppm for cattle and hogs and 1.25 ppm for poultry. Therefore we conclude that the established 0.1 ppm tolerance is adequate to cover secondary residues of acephate and methamidophos that may result from the feeding of treated feed items.

Conclusions

1. Residues of acephate and its metabolite methamidophos will not exceed:

3 ppm (of which no more than 0.3 ppm is methamidophos)	in or on	grapes grape juice raisin waste
9 ppm (of which no more than 1 ppm is methamidophos)	in or on	raisins dried grape pomace

2. Secondary residues of acephate and its metabolite methamidophos in meat, milk, poultry and eggs will not exceed the established tolerance of 0.1 ppm.

Recommendation

TOX considerations permitting, we have no objections to the proposed Section 18 exemption. An agreement should be made with FDA regarding the legal status of the treated commodities in commerce.

cc: R.F., Circu, Reviewer, Subject file, Section 18 S.F., TOX
RDI:Section Head:RJH>Date:4/27/83:RDS>Date:4/27/83
TS-769:RCB:Reviewer:E.Zager:LDT:557-7324:CM#2:RM:810>Date:4/27/83